

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE
SUBCOMMITTEE ON ENERGY**

HEARING CHARTER

*An examination of H.R. 3890, a bill to reauthorize the Metals Program at the
Department of Energy*

**May 20, 2004
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building**

1. Purpose

On Thursday May 20, 2004, the Subcommittee on Energy of the U.S. House of Representatives' Committee on Science will hold a hearing to examine H.R 3890, a bill to reauthorize energy efficiency research and development (R&D) at the Department of Energy (DOE) to support the domestic metals industry.

2. Witnesses

Mr. Douglas L. Faulkner is the Principal Deputy Assistant Secretary for Energy Efficiency and Renewable Energy at the U.S. Department of Energy.

Mr. Richard A. Shulkosky is Vice President for sales, marketing and product development at the INTEG Process Group, a small company that supplies industrial process control systems and electronics.

Ms. Lisa A. Roudabush is the General Manager of Research for the United States Steel Corporation, where she oversees the company's Research and Technology Center in Monroeville, Pennsylvania.

Dr. Ronald Sutherland is a Consulting Economist and Adjunct Professor of Law at the George Mason University School of Law. His experience includes 17 years as an economist at two DOE national laboratories, and two years as a senior economist at the American Petroleum Institute.

3. Overarching Questions

The hearing will address the following overarching questions:

1. What is the current status of the Federal government's efforts in energy efficiency R&D for the metals industry? How would H.R. 3890 change the current program? How could H.R. 3890 be improved?
2. What are the benefits of the program, and who are the recipients? How are these benefits measured? What are the costs of the program?
3. What are the primary barriers to increased development and adoption of more energy efficient products and processes in industry, and how can these barriers be removed?

4. Overview

The DOE R&D program to help the domestic metals industry improve its energy efficiency was first authorized by the *Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988* and reauthorized in the *Energy Policy Act of 1992*. Authorization of appropriations expired in 1997, although Congress has appropriated funds each year since then.¹ H.R. 3890 would authorize appropriations for metals-related energy efficiency R&D programs for fiscal years 2005 through 2009 and make other minor modifications to the current law. The hearing will address the implications of reauthorization; past and potential future benefits and costs of the program; and policy alternatives that might also help achieve the public benefits associated with improved energy efficiency in the metals industry (e.g., energy security, reduced emissions of pollutants and greenhouse gases).

5. Summary of H.R. 3890

The bill amends the *Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988*. Primarily, the bill authorizes appropriations of \$10 million each year for fiscal years 2005 through 2009 for the Department of Energy. The bill also includes provisions to:

- Include the potential for technologies to reduce greenhouse gas emissions as a consideration in research planning;
- Repeal a section related to programs at the National Institute of Standards and Technology (NIST) that have been inactive; and
- Reestablish a requirement for an annual report to the President and the Congress on R&D activities carried out under the program.

¹ Under DOE's broad authority to conduct energy efficiency R&D, Congress had appropriated funds for such activities even before the establishment of program in 1988.

6. Background

What did the underlying legislation do?

The underlying act, *The Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988*, (the Act) authorized a program to “increase the energy efficiency and enhance the competitiveness of American steel, aluminum, and copper industries” through research and development activities at DOE. While a program already existed at DOE, the Act required an updated research plan, set the minimum cost share from industry at 30 percent, identified specific priorities for consideration in project selection, required regular reports to Congress, and outlined intellectual property rights for discoveries of the research. The Act also mandated participation by industry and labor in the development of the management plans. The Act also called on NIST to provide instrumentation and measurement R&D support to the programs.

What programmatic changes does H.R. 3890 include?

In addition to authorizing \$10 million per year for fiscal year 2005 through fiscal year 2009 to carry out the program, H.R. 3890 proposes to:

- **Authorize research to target greenhouse gas reductions.** As large energy consumers the metals industries make a significant contribution to total emission of greenhouse gasses, including carbon dioxide. This provision, included at the request of the metals industry, would explicitly allow research projects that concentrate on reducing these emissions;
- **Repeal the sections of the Act that refer to NIST.** The NIST portion of the program has not been active for many years. While NIST’s general authorities would allow work to continue on competitiveness for the metals industry, the bill’s sponsors believe that it is most important to focus the program at the Department of Energy;
- **Require an annual report to Congress.** The report must include a summary of the research and development activities, including budget information, together with any recommendations from the Secretary on other actions that could assist the industry. The report must also contain an analysis of the extent to which projects succeeded in accomplishing the purposes of the Act.

How does the existing program work?

The program is closely coordinated with industry through participation in research planning and cost-sharing. This involvement serves as a “market test” of whether industry perceives the activities as important enough to contribute their time and money. In general, the program solicits proposals, which are concurrently reviewed by the industry’s trade organization and DOE to ensure that the projects meet the criteria and objectives of both. The resulting list of qualified proposals is then distributed to the trade group’s member companies, which determine priority projects by identifying projects for which they are willing to cost share. Project awards are made, and the research is

generally conducted at universities and national laboratories, although some research may also be carried out onsite at participating companies' facilities. To ensure that the benefits are realized domestically, the Act limits company participation to those companies "substantially involved in the United States domestic production, processing, or use" of steel, aluminum or copper.

What are the funding levels for the program?

In 2004, Congress appropriated \$6.7 million for the steel program and \$6.6 million for the aluminum program. The 2005 Budget includes \$3.8 million and \$2.7 million for these programs, respectively. Historic funding levels are provided in Appendix III.

What methods are used to calculate the past and expected future benefits of the program as reauthorized in H.R. 3890?

Benefits of R&D programs are notoriously difficult to quantify. Moreover, Federally-funded applied R&D programs frequently supplement private sector investments, making it difficult to attribute benefits of technology developments to either the Federal government or the private sector. Proponents of the program say that Federal funding helps push private research investments to pursue public goals, such as emission reduction, job creation, and energy efficiency that might be less of a consideration in a more traditional business investment. The industry claims that in addition to savings to the industry, improved products mean additional benefits to the public. For example, the industry says that improved metal casting as a result of this research has allowed the automobile industry to reduce weight without sacrificing strength, resulting in a savings of two billion gallons of gasoline in 2001. This is equal to about 50 million barrels, or over two days of total domestic oil consumption. It is difficult to know how much of these benefits would have been realized without an incentive program. Clearly, the methods used to estimate public benefits, and to identify how much of those benefits are attributable to the Federal investment, are important to deciding if the program is a sound investment of taxpayer dollars.

7. Questions for the Witnesses

The witnesses were asked to address the following questions in their testimony:

Questions for Mr. Faulkner

1. What is the Administration's view on H.R. 3890, a bill to reauthorize the Steel and Aluminum Competitiveness Act of 1988? What recommendations would the Administration make, if any, to improve it?
2. What has been the total taxpayer cost to date for DOE's R&D program to improve energy efficiency in the steel and aluminum industries? What public benefits has the program produced to date? What are the expected future benefits of further

taxpayer investment? Please summarize the methods DOE uses to calculate benefits, both retrospectively and prospectively.

Questions for Mr. Shulkosky

1. Please briefly describe your company's experience with the energy efficiency programs funded by the Department of Energy (DOE). How has Federal funding affected decision-making at your company?
2. What products and processes have been designed or improved as a result of the program? To what extent has private industry adopted these products and processes? How has the public benefited from this work? How can the program be improved?
3. How competitive is the U.S. aluminum and steel industry on an international basis? Has the work conducted in the DOE metals program contributed to a more robust U.S. metals industry?
4. Should the Federal government continue to support R&D to improve energy efficiency of the steel and aluminum industries? To what extent are other countries supporting their steel and aluminum industries? What percent of steel and aluminum comes from multinational corporations?
5. Please comment on HR 3890, the legislation being considered in this hearing.

Questions for Ms. Roudabush

1. Please briefly describe your company's experience with the energy efficiency programs funded by the Department of Energy (DOE). How has Federal funding affected decision-making at your company?
2. What products and processes have been designed or improved as a result of the program? To what extent has private industry adopted these products and processes? How has the public benefited from this work? How can the program be improved?
3. How competitive is the U.S. aluminum and steel industry on an international basis? Has the work conducted in the DOE metals program contributed to a more robust U.S. metals industry?
4. Should the Federal government continue to support R&D to improve energy efficiency of the steel and aluminum industries? To what extent are other countries supporting their steel and aluminum industries through R&D funding? What percent of steel and aluminum comes from multinational corporations?

5. Please comment on HR 3890, the legislation being considered in this hearing.

Questions for Dr. Sutherland

1. Should the Federal government continue to support R&D to improve energy efficiency of the steel and aluminum industries? To what extent are other countries supporting their steel and aluminum industries through R&D funding? What percent of steel and aluminum comes from multinational corporations?
2. Please comment on HR 3890, the legislation being considered in this hearing.
3. What are the primary barriers to increased development and adoption of more energy efficient products and processes, and how can these barriers be removed?

APPENDIX I

Section-by-Section Summary of *H.R. 3890, a Bill to Reauthorize the Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988*

Authorizes appropriations of \$10 million for each of the fiscal years 2005 through 2009, amends one of the list of priorities to delete “coatings for sheet steels” and substitute “sheet and bar steels,” adds a new priority that authorizes research on technologies that reduce greenhouse gas emissions, strikes the section referring to activities at NIST, and inserts language requiring a report to Congress.

APPENDIX II

Full Text of *H.R. 3890, a Bill to Reauthorize the Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988*

IN THE HOUSE OF REPRESENTATIVES

March 4, 2004

Ms. HART (for herself, Mr. MURPHY, and Mr. ENGLISH) introduced the following bill; which was referred to the Committee on Science

A BILL

To reauthorize the Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. AMENDMENTS.

(a) Authorization of Appropriations- Section 9 of the Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988 (15 U.S.C. 5108) is amended to read as follows:

‘SEC. 9. AUTHORIZATION OF APPROPRIATIONS.

‘There are authorized to be appropriated to the Secretary to carry out this Act \$10,000,000 for each of the fiscal years 2005 through 2009.’.

(b) Steel Project Priorities- Section 4(c)(1) of the Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988 (15 U.S.C. 5103(c)(1)) is amended--

(1) in subparagraph (H), by striking ‘coatings for sheet steels’ and inserting ‘sheet and bar steels’; and

(2) by adding at the end the following new subparagraph:

`(K) The development of technologies which reduce greenhouse gas emissions.'.

(c) Conforming Amendments- The Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988 is further amended--

(1) by striking section 7 (15 U.S.C. 5106); and

(2) in section 8 (15 U.S.C. 5107), by inserting `, beginning with fiscal year 2005,' after `close of each fiscal year'.

APPENDIX III

Funding History for the Metals Program

| Fiscal Year | Steel | Aluminum | Total, Metals |
|--------------|--------------|--------------|----------------------------------|
| 1986 | ND | ND | \$7,134,000 |
| 1987 | ND | ND | \$2,000,000 |
| 1988 | ND | ND | \$4,000,000 |
| 1989 | ND | ND | \$0 |
| 1990 | ND | ND | \$16,639,000 |
| 1991 | ND | ND | \$17,394,000 |
| 1992 | ND | ND | \$17,742,000 |
| 1993 | ND | ND | \$17,937,000 |
| 1994 | ND | ND | \$19,336,000 |
| 1995 | ND | ND | \$5,072,000 |
| 1996 | ND | ND | \$3,869,800 ¹ |
| 1997 | \$8,905,000 | \$5,503,000 | \$14,408,000 |
| 1998 | \$9,547,000 | \$7,203,000 | \$16,750,000 |
| 1999 | \$10,308,000 | \$7,925,000 | \$18,233,000 |
| 2000 | \$10,486,000 | \$11,178,000 | \$21,664,000 |
| 2001 | \$10,365,000 | \$10,876,000 | \$21,241,000 |
| 2002 | \$10,119,000 | \$7,948,000 | \$18,067,000 |
| 2003 | \$10,083,000 | \$7,908,000 | \$17,991,000 |
| 2004 | \$6,685,000 | \$6,583,000 | \$13,268,000 |
| Total | N/A | N/A | \$239,187,800² |

Source: Department of Energy. ND = No Data. N/A = Not Applicable.

¹ Reflects an adjustment of \$230,200 to fund a contract audit and a deobligation of \$500,000.

² Reflects rescission of \$13,558,000 in 1995